

1 WHAT IS CLAIMED IS:

1 1. A whetstone pellet, which is fixed multiple on a
2 pedestal to form a whetstone, comprising
3 a columnar base body to be fixed to the pedestal, and
4 a plated layer formed on a surface of the base body,
5 wherein said plated layer contains abrasive grains.

1 2. A whetstone pellet according to claim 1, wherein,
2 said plated layer is an amorphous plated layer.

1 3. A whetstone pellet according to claim 2, wherein,
2 said base body is made of a metal that functions as
3 a catalyst upon forming said amorphous plated layer.

1 4. A process for producing a whetstone pellet, a plurality
2 of which is fixed on a pedestal to form a whetstone, comprising
3 steps of:

4 preparing plural columnar base bodies to be fixed on
5 said pedestal, and
6 forming an abrasive grain layer with a plating solution
7 containing abrasive grains on end surfaces of the columnar
8 base bodies, which are opposite to the end surface to be
9 fixed to said pedestal.

NK178202(US)

1 5. A process for producing a whetstone pellet according
2 to claim 4, wherein,

3 said plural base bodies are fixed on a fixing plate,
4 a catalyst layer for electroless plating is formed on
5 end surfaces of said base bodies opposite to end surfaces
6 to be fixed to said fixing plate before or after fixing said
7 plural base bodies on said fixing plate, and
8 said plural base bodies fixed on the fixing plate are
9 immersed in an electroless plating solution containing
10 abrasive grains to form abrasive grain layers on said catalyst
11 layers of said base bodies.

1 6. A process for producing a whetstone pellet according
2 to claim 5, wherein,

3 a masking agent is applied to a surface of said fixing
4 plate, before immersing said plural base bodies in said
5 electroless plating solution, to fix the end surfaces of
6 said plural base bodies to said fixing plate with said masking
7 agent as an adhesive, and said masking agent is applied to
8 the surface of said plural base bodies, on which said abrasive
9 grain layers are not formed.

1 7. A process for producing a whetstone pellet according
2 to claim 4, wherein,

3 after forming said abrasive grain layer on each said

NK173202(US)

4 base body, said abrasive grain layer is processed to
5 uniformize thickness of said abrasive grain layers.

1 8. A whetstone having plural abrasive grain layers dotting
2 a pedestal, comprising:

3 plural columnar base bodies fixed to said pedestal,
4 and

5 abrasive grain containing-plated layers containing
6 abrasive grains, that function as said abrasive grain layers,
7 formed only on surfaces of said base bodies including end
8 surfaces of said base bodies.

1 9. A whetstone according to claim 8, wherein,
2 said plated layer is an amorphous plated layer.

1 10. A process for producing a whetstone having plural
2 abrasive grain layers dotting a pedestal, comprising steps
3 of:

4 preparing said pedestal and plural columnar base bodies
5 to be fixed on said pedestal,

6 fixing said plural base bodies on a surface of said
7 pedestal, on which said base bodies are to be fixed, and

8 forming said abrasive grain layers on at least end
9 surfaces of said base bodies with a plating solution
10 containing abrasive grains.

NK173202(US)

1 11. A process for producing a whetstone according to claim
2 10, wherein,

3 after forming said abrasive grain layers on the end
4 surfaces of said plural base bodies, said plural abrasive
5 layers are processed, so that a plane shape formed by
6 continuation of surfaces of said plural abrasive grain layers
7 has an inverse shape of an objective surface to be processed.

1 12. A process for producing a whetstone which comprises
2 steps of fixing plural base bodies on a pedestal, and forming
3 abrasive grain layers on end surfaces of the base bodies,
4 comprising a step of:

5 processing said end surfaces of the base bodies so that
6 a plane shape formed by continuation of the end surfaces
7 of said plural base bodies fixed on said pedestal has an
8 inverse shape of an objective surface to be processed.

1 13. A process for producing an optical element, comprising
2 steps of:

3 preparing a whetstone in which base bodies are fixed
4 on a pedestal, and plated layers containing abrasive grains
5 are formed only on surfaces of the base bodies including
6 end surfaces of the base bodies, and

7 processing a raw material of an optical element by using
8 the whetstone to form the optical element or an intermediate

9 product of the optical element.

1 14. A process for producing an optical element according
2 to claim 13, wherein,

3 said plated layers are amorphous plated layers.

1 15. A process for producing an optical element according
2 to claim 13, wherein,

3 in said processing step of the raw material of an optical
4 element, a grinding process and a polishing process, which
5 is to be carried out after said grinding process, are carried
6 out, and

7 in said grinding process, the raw material of an optical
8 element is ground by using the whetstone.

1 16. A process for producing an optical element according
2 to claim 13, wherein,

3 said raw material of an optical element is fluorite.

1 17. A process for producing a exposure apparatus equipped
2 with an optical system including a lens, comprising steps
3 of:

4 preparing a whetstone in which plural base bodies are
5 fixed on a pedestal, and plated layers containing abrasive
6 grains are formed only on surfaces of the base bodies

NK173202(US)

7 including end surfaces of the base bodies,
8 processing a raw material of a lens by using the
9 whetstone to form the lens or an intermediate product of
10 the lens, and
11 installing the lens obtained by processing the raw
12 material of a lens into the optical system.

1 18. A process for producing a exposure apparatus according
2 to claim 17, wherein,
3 said plated layers of the whetstone are amorphous
4 plated layers.

1 19. A process for producing a exposure apparatus according
2 to claim 17, wherein,
3 said raw material of a lens is fluorite.